THE

SOUTHERN AGRICULTURIST.

AUGUST, 1829.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*Secrets in Cotton Revealed; by an* "ENEMY OF SECRETS."—*Third Secret Revealed.*

(Concluded from page 298, vol. 1.)

Mr. Editor:—Without any apology for delay, other than the fact, that I have been attending to my own concerns, which I hold to be the bounden duty of every man, before he engages in those of the public.—I shall proceed to reveal the third secret, relating to the *mode of cleaning* Cotton.

The difference, in the appearance and real value of Cotton, arising entirely from the manner in which it is cleaned, can hardly be realized by those unacquainted with its use. Cotton is Cotton to most, even of the growers; but to the Merchant, and more particularly the Manufacturer, the Cotton cleaned by one Planter is worth far more than that of his next neighbour. This difference, however, may, in the following way, be removed.

To clean Cotton, those employed in the work must be clean. This may seem like a reflection, but it is nevertheless true that some hands employed in cleaning Cotton, rather injure it. Besides, go into the cotton-houses, gin-houses, *et cætera*, and examine the apparatus employed by some, in this work, and I submit the question, whether it

be possible for them to clean Cotton. The secret then of cleaning Cotton, is *to be clean.*

Sorting.

Respecting this, there have been entertained some egregious errors. Many Planters, after drying their Cotton, from the field, throw the whole crop together; and then sort the white from the yellow; than which, a greater error can scarcely be imagined. It is assuming the ground that the first and last of the crop, (to say nothing of the distinctions made by rains, winds, and exposure to the sun,) are of the same quality; which I will venture to aver never was the fact, in a single instance. The first few pickings are invariably better Cotton than those of the last; and though the exact time to make the separation cannot be named, yet the first part of a crop should always be kept distant from the last. It is not only better Cotton, but it is *from this* that *the seed is to be selected* for the next crop. So far, Cotton should be sorted when it comes from the field, and further, it would be better if the white and yellow were generally separated at the same time. This would divide the crop into four distinct parcels, which would require but little time or labour to sort for the gin. Upon supposition that the whole crop be of the same kind of seed, this is all the sorting necessary. The principle here involved is, that *Cotton of the same quality should be kept together.*

Whipping.

Not less erroneous have been the views of most, respecting this. It is generally supposed that whipping Cotton injures its staple; but, if it be properly sorted, it is almost impossible to whip it too much. The only injury Cotton ever sustained from this, has arisen from mixing those of different qualities—from not properly assorting it. Take Cotton of the same quality, and it should pass once or twice through the common double-barrelled Whipper before it goes to the gin, two or three times before being moted, and three or four after. This takes out the waste Cotton, and gives the rest a fine appearance. It may be objected to this, that the loss in weight is too great; be assured, however, that the loss in price, where it is not done, is greater.

Ginning.

In doing this, all possible pains should be taken to keep the Cotton from dust and dirt, especially from oil and greasy hands. Indeed there ought to be a revolution in gin-houses. They should be swept every day, and washed every week; besides they should be furnished with water for those who work there, to wash. Great improvement may, and it is hoped will be made in this part of cleaning Cotton.

Moting

Should be done with good eyes, delicate fingers, and on wire tables. The common way of doing this is of little account, for the Cotton collects, during the process, almost or quite as much dirt as is taken from it. Leaves and broken seeds may be removed; but something else, perhaps, worse received. This, however, can easily be prevented, by the use of *wire tables*, which may be obtained at comparatively little expense. No planter should be without them.

Packing

Should be done with much care, by some dandy of the plantation. That is, by the neatest and most faithful hand that can be found; one who will keep clean what is already clean. This done, the Cotton is prepared for market. And it requires no revelation to inform you, that it should be sold for the highest honest prices.

Thus I have revealed *three secrets*, which are all that Cotton growers need to secure the highest reputation as planters, and the highest prices in market. And should they add any thing to the general stock of agricultural knowledge, or even excite a spirit of inquiry on the subject, the honour is your's, sir; for had it not been for your valuable journal, they would have remained secrets with your friend,

AN ENEMY OF SECRETS.

OBSERVATIONS BY THE EDITOR.

Our Correspondent, "*An Enemy of Secrets*," whose third Essay we acknowledged some time ago, has given some val-

uable advice to Cotton-planters, and particularly to those who wish to plant the Silk Cotton. But much as we admire his apparent zeal in a good cause, and greatly as we are opposed to all those principles which turn upon the mere pivot of self-interest, we could not help looking at some of his recommendations with rather a jealous eye. We therefore deferred publishing his last paper until we could accompany it with a few cautionary remarks, applicable to some parts of his system, and supported by authority on which *we*, and we are confident all our readers, have great reliance; and we have done this, believing that a part of the advice, however sincerely intended to benefit the ignorant, might lead some astray, far from the road to wealth, and still further from the much envied fame of *secret prices!*

Either our Correspondent must permit us to point out as a great inconsistency in this system of management, the recommendation of early planting—*early with an emphasis*, connected as it is with the painful, laborious, and of course, expensive method of selecting the Silk Cotton Seed; or he must allow us to suppose that a part of his instructions is collected at second-hand, from various planters, and hence its discrepance. We will not believe that any one, however far the desire to keep every thing connected with this culture secret, might carry him, would wish to mislead his neighbours and the public, and involve those in difficulty and loss whose welfare must depend upon their success in these operations; and yet we cannot imagine any measure so likely to defeat all efforts to grow this Cotton to advantage, as the practice recommended (p. 300, vol. 1.) under the title, *Planting*. The very style of rough, honest advice in which these Essays are written, would be apt to carry along with it the most cautious planter who has not reflected seriously on the consequences of the failure of seed so dearly purchased, or in fact who has not been struck with the blind perseverance of so many otherwise cautious men, in throwing away their time and labour in planting their Cotton too soon, by a whole month or six weeks.*

What can be more tedious and expensive than to collect Cotton seed of the *six* various kinds enumerated by our Cor-

* See Mr. Spalding's observation on this very point, in this number—and we thank him for the excellent remark.

respondent; (p. 165, vol. 1.) yet seed so difficult to be got, and at best in but small quantities, is to be thrown into the lottery of early planting; is to be in the ground by the tenth, fifteenth or twentieth, nay, perhaps, by the first day of March.* Our readers must be forcibly struck with the consequence, to those who planted Cotton according to these directions, *this present crop*, compared with the result of planting, according to the simple rule we gave in page 266, of our last number.

We do not ask those who actually did lose their first planting, whether what little was left by the frosts, "*will be worth enough more to pay for planting over*," as our Correspondent, we think, incautiously states it, but whether that little is worth the month's time and labour of all hands thus lost upon it, and which might have been so advantageously bestowed upon a *sugar crop*, or any other work!

A striking anecdote, showing the necessity of attending to the period of planting Cotton, has been repeatedly mentioned to us, and it is so much in point, that we beg leave to quote it; it is another instance "of the *failures of planters being more instructive than their successful efforts*," for no one who reads it will henceforward plant Cotton on the sea-board, without serious reflection.

A Cotton-planter had planted a particular piece of land for many years, and so uniformly failed in his crop, that he, as well as many of his neighbours, was persuaded that the land would not bring Cotton, although they could not discover the reason of this extraordinary circumstance.—From what cause we know not, but under the impression of mind we have stated, the planter sold the land in question, which was purchased by a neighbour.

As soon as this new proprietor took possession of the place, he remarked, "it has been supposed that this land cannot produce Cotton, I will show you how to make it bring good crops." He did so, and the whole secret was finally disclosed. It consisted *in not planting too early*.—The failure of the first proceeded from the simple cause of

* Acting upon our Correspondent's advice of *early with an emphasis*, and also conforming to the old instructions for Cotton-planting, still followed by many, year after year, without reflection. These recommend beginning to plant by the first of March, "*if the season is favourable.*" What is so uncertain—so deceitful, as a favourable season in the month of March?

putting the seed in the ground always much too soon, his error had been seen and was avoided by this neighbour, whose success was complete! These facts we have from unquestionable authority.

In the Essay before us, we likewise objected, at the first perusal, to the article *Whipping*. We have seen so much Cotton injured materially by this process *formerly*, that the expression, "*it is almost impossible to whip it too much*," appeared to us likely to lead away many inexperienced Cotton-planters. The improved *Whippers*, however, it is found, do not injure the Cotton, and we therefore recommend to our readers the same experiment as was tried by an intelligent friend, on whose experience we place great reliance. It is was this: The Cotton for three bags, was whipped with Birnie's Patent Cotton Whipper, *much more* than the rest of his crop, and sent to market. A difference in its preparation was stated to the factor, but the manner by which this difference was effected, was not disclosed. He found the purchaser approved of the three bags which were thus whipped, and gave a preference to them over the rest of the crop. A neighbour of our friend's, who tried the same experiment, met with the same success, and a difference of price was made in favour of the Cotton *extra whipped*. The advice of our Correspondent, "*An Enemy of Secrets*," literally followed in the number of turns of the whipper to be given, would, we think, be correct; but we would add, *try a few bags;* send these to market, and judge by the sale. At present we believe the judgment and opinions of purchasers of Cotton are more to be relied on than during the speculative time of the French Revolution, and then immediately following that period of commercial derangement.*

* At the time spoken of, all the great articles of agricultural produce, as well as all other articles which form the basis of commercial pursuit, particularly *Cotton*, on account of the increasing consumption, and its quality of keeping well, were objects of intense speculative demand. The speculators were sometimes good judges of the quality of this article, sometimes they were grossly ignorant, and even unable to tell the difference between Sea Island and Upland; but as is the case too frequently, the most ignorant were ready to give opinions and advice to any planter who applied to have his difficulties explained. (See Mr. Elliott's observations on the subject, p. 155, vol. 1.) At the time spoken of *even the factors* were but indifferent judges of fine Sea Island Cottons. But even then there were some marks truly valuable, amongst others, Mr. Francis Simons, deceased. (F. S.)

The best and safest mode of cultivating Cotton, is not understood by every one; hence the continued loss of crops by many planters, who yet go on from year to year imputing to bad seasons those failures which proceed from their own ignorance, the mismanagement and neglect of their overseers, or the villainy of their drivers.

We hope that some liberal minded and independent gentleman, whose ideas extend a little further than his own enclosure, *who feels that he has a country*, will give us the general system and practice of John's Island, Edisto, and other places adjoining, where the Cotton-planters are the most successful of any in the State. The best period to plant is well known: a rotation of *fields*, if not of *crops*, has been introduced amongst them, which has been attended with the most beneficial consequences; and this depending on the system of enclosing and manuring *by grass crops*, a perfect knowledge of these and other details, would go far to improving our Southern agriculture generally.

Our Correspondent, whose three Essays we strongly recommend to the study of all planters of Sea Island Cotton, we trust will not be offended with the observations his instructions have drawn from us. Believing, as we do, that he intends to make his advice a benefit to all, we think he must approve of *our* efforts also, to add to their utility. It will give us pleasure to hear again from him on the subjects he has himself chosen, *Manuring* and *Ploughing*, as soon as the attention to his own concerns will permit! We assure him they shall have a conspicuons place in our pages.

In a community such as ours, where every agriculturist has, at some season of the year, large portions of leisure, we confess we think all are bound to give their aid to forward the great cause of improvement. If individuals, departing from this principle, draw a line of separation around themselves and their concerns, either from self-conceit, pride, or from motives of mere personal interest; they will soon find lines of *countervallation* thrown around them also, that will prevent a return to that social intercourse with the world, on which the happiness of every human being so greatly depends. Life, at best, is but a give-and-take business, and he who refuses to-day to furnish his quota of aid or information to his neighbours, may find himself on the morrow constrained to look to those very neighbours

to assist in protecting him in his property, or his most common rights, and will do it with an exceedingly bad grace.

We regret to find from Mr. Seabrook's observations, in our last number, that a want of confidence is shown in the intercourse between some Cotton-planters and their factors. We have known the factors of Charleston, intimately, for thirty years past, and we would ask, *not the Rice-planters, for they seldom change their factors*—but *these* Cotton-planters, in what city, or in what country, could men of business be found, who more completely combine all the qualities the planter can require? As *men of business*, they are prompt, diligent, and expeditious; as *friends*, in the way of business, they are kind, open and liberal, always to be depended upon, *when they can depend upon the party they have dealings with.* They, and *their extensive capitals*, are the stay and support of the planter in years of misfortune, of his family in its heaviest afflictions. We have sometimes seen planters leave their old factors, but seldom with advantage, the want of confidence in the mind of the planter himself, which first occasions the change, he necessarily carries with him to the next factor he employs; the occasion of that change begets a restraint on the part of the new factor, who has every reason to fear a recurrence of the inclination to shift, and their feelings on both sides very naturally bring about another, and another change. Factors, as well as other men of business, must be judged of *on general principles*, not by single solitary instances of sales, either good or bad, of one or two parcels of produce, the particular circumstances of which cannot be known to every one. If a factor is a regularly brought up man of business, he knows well that he dare not relax in his vigilance—*he dare not*, for his own sake, make a careless sale of produce. On this general principle, on the respectability and responsibility, and on the good faith of the factor, the planter can better rely for security, than on his own supposed *keenness in money matters.*

Nothing shows greater ignorance of their own real interest, than planters selling their Cotton or their Rice, or their own produce themselves. Independent of their ignorance of the changes in price, which will always be used *against them;* of the risk of bad debts; there is a disadvantage to the *merchant*, in buying from one who is not regu-

larly in business, which can only be compensated for *by a purchase at an inferior price.* In dealings with factors, extensive operations in business go on regularly, without interfering with one another. If errors or difficulties occur, the factors are at the spot to rectify them. Would it be possible to carry on the Cotton Trade of South-Carolina, or its Rice Trade, if merchants made their purchases from the planters themselves? Would it not be necessarily attended with more loss of time, and give more trouble to the merchant, to purchase one thousand bags of Cotton, and one thousand barrels of Rice, from ten or twenty planters *not dwelling* in Charleston, and all anxious to get out of town, than from two or three factors, who are residents in the place. The planters must know that the sacrifice of convenience and time could be made up only in one way—*by buying cheap.* In dealing out of the common way, or with men who are not men of business, it is too common to make *good bargains,* and planters ought to know this.

There are, to be sure, *seeming* exceptions to these rules, but do not let the planter, who forms the exception, exult too much in his supposed *finesse.*

Any man of common experience in business, must see in the price given to particular planters, *(we do not mean Mr. Burden!)* for their Silk Cotton, the total downfal of the great secret prices. So little do planters look beyond the mere price of the day; so little do they know of the manner they can be acted upon by a keen and experienced man of business; ignorant, as they necessarily are, of what is going on in the trading world, that many of them will scarcely believe us when we assert, that it was more for the interest of the fine spinners, that — per pound, should have been given for two successive crops, than *forty cents,* which the agent *might* have offered, and which it has been asserted, *by the best authority,* would have been considered as the full value of the Cotton by the party more deeply interested, if it had been offered to him.

*It will be found, hereafter, that the fine spinners, and their agents, know well "how to lose à propos!"**

* We will be explicit in this article, because we *think* some very dangerous innovations are taking place in our Cotton Trade, and because we *know* that some very mistaken ideas are abroad amongst even our best informed planters.

But while we thus join our efforts to those of our intelligent and patriotic Correspondents, (the observations of one of whom, in our last number, we did not see until they were in print,) we do so, satisfied that nothing can at present resist the tide of public prejudice, against which they so feelingly write. We can well imagine the *staid solemnity* of the agricultural meetings Mr. Seabrook alludes to. But these things will pass away. In another crop or two, all secrets will be disclosed; and with the excitement *these* have occasioned, will pass away also, all those unkind feelings, so much the reverse of patriotic, and the restraints they have put upon the common intercourse of society.—Happy will it be for Carolina, if the secret prices of Silk Cotton are the only causes of cold and formal looks amongst neighbours and near connexions, and amongt those who ought to be, from *common interest*, the very best of friends.

J. G.

If the Cotton-planter succeeds in bringing on a direct mercantile intercourse, as some appear desirous of doing, between spinners and planters, *the planters must be the losers.* The factors, merchants, brokers, &c. are all as much interested in *selling dear* to the spinners as the planters themselves. Charleston factors and merchants, and foreign brokers, it is well known, are paid by a per centage commission on the value of the produce they sell: the higher the price, therefore, the greater is their commission. Foreign merchants are generally satisfied, in times of regular trade, with making a *commission* and interest on the money they invest in *their* purchases. This they expect to do, whether the price is high or low. But high prices give them high commissions, and of course high profits. Such being the case with all these parties, every man of common discernment must see, that the intermediate agents, between the growers of Cotton and the manufacturers of it, are all paid to keep up the price of produce. To get rid of these and their efforts, would be to get rid of our real friends. The active correspondence; the early intelligence, by which alone the operations of merchants can be made profitable, are the great means of regulating our markets, and giving the first notice of extraordinary changes taking place. It must be remembered, too, that the *profitable use* of the capital of all these agents, depends upon keeping the prices of produce from *falling*, and still more, by producing a *rise in price*, which must operate to the advantage of the planter.

The capital of the factors in Charleston, especially, and its influence, is lost to every planter who sells his crop himself. *The power of this capital in keeping up the price of Cotton and Rice, has often astonished us.* If it were withdrawn, produce in the South, would frequently be reduced to the lowest ebb.

By paying the factor's commission, the planter procures the highest price his produce is worth. By saving that commission, he does what he can to ensure the lowest.

ART. II.—*On the time to Plant Sea-Island Cotton, and on the best mode of treating new and worn-out Land; by* THOS. SPALDING.

[It is quite unnecessary for us to recommend any Essay of Mr. Spalding's to the attention of our readers; nor should we on this occasion have made a single remark, if the paper we now publish, with a satisfaction we shall not attempt to disguise, had not been expressly sent us in reply to some queries we put to Mr. S. for the elucidation of a subject we have much at heart.

We have long been of opinion, as we have repeatedly observed, that Cotton planting is not fully understood by all our friends, and that great losses are annually sustained in time, labour, and of course, of produce, from this cause. The information we had collected relative to the John's Island and Edisto-Island method of planting, satisfied us on this point; yet when in the fulfilment of our duty as an Editor, we came to peruse with that attention the importance of the subject required, the three Essays of our Correspondent, "*An Enemy of Secrets*," we determined to apply to Mr. Spalding, for his opinion also, on the best time to plant, and in doing so, we asked his advice on some other subjects connected with our Southern Husbandry. He has, with his usual liberality and promptness, given us the following able reply, and our readers will, we are confident, peruse this valuable paper with a pleasure and with *an improvement* equal to the attention they bestow upon it. J. G.]

"*Dear Sir:*—Your letter of the 10th of April was only received by me this morning; because I was absent for some days, in Savannah.

I regret this, lest you should, for a moment, suppose my zeal for the success of "*The Southern Agriculturist*," or my desire for the extension of its circulation, had in any degree abated. It has not, sir, and it gives me pleasure in any way to contribute my mite to its usefulness.

I will then proceed to take up the suggestions contained in your letter, in the order in which you have placed them, and will give you such opinions as the experience of thirty-five years, may have produced upon my mind.

In most agricultural operations, it is of primary importance to be ahead of time, and of the seasons. In Europe, heavy lands can only be broken up, and pulverized effectually for small grain, when neither too wet nor too dry.—The farmer must, therefore, be at liberty to watch his opportunity, that his work may be well done.

In the heavy drill husbandry of our Rice culture, the quantity of product is measured in some degree by the time that

the seasons give for sowing in the spring, and the time that the seasons allow for reaping in the fall. The planter cannot, therefore, select the point of time, he would prefer for either the one or the other of these operations; but surrendering himself to circumstances, must commence sooner and end later than his judgment would direct. Even in the culture of Indian Corn, there is an eventful period in its growth, when, if it is not watered by refreshing showers, the product will be nothing. The grower must remember, that June and August, in our climate, are our rainy months, and so arrange his planting, that the showers of one or other of these months shall fall upon his Corn while in silk or tassel.

Nothing of all this is necessary in Cotton; "being early," in my humble conception, is of *less importance* with Cotton than with any other object we cultivate. For it is in every climate the tenderest plant that grows; the frost, the wind, the worm, will destroy it, and these successive evils press upon it from the first of March to the first of May. I have an hundred times seen an entire field up and looking well on the first day of March, and not one twentieth part of a crop in the same field, on the first day of May; all, however, may yet succeed, Cotton has time enough from the first day of May to grow and perfect its fruit,* and probably from the same cause that a horse would have grown a little larger that had pastured in the valley, from his foaling up, than he would have grown, had he broused as a colt, upon a bleak or barren hill. The analogy between the animal and vegetable world, is every day making stronger and deeper impressions upon the minds of reflecting men; for they discover that the wisdom of the Law-giver did not require that he should complex his means by a multiplication of his will.

But is there nothing lost by planting a month sooner, if there is nothing gained? I think there is a month's work; one twelfth of the gross labour of the plantation, which is much more than the twelfth part of the neat product of the field. For we are not now to learn, that the sum total of the property, that belongs to man, is his labour. He may multiply it by employing his capital to make others labour for him. He may add to it by bringing his ingenuity on the

* We hope this observation will be particularly remarked, for we believe that too early planting has been a fatal error hitherto.—*Ed. of So. Ag.*

result of it into the operation. He may subtract from it, by wasting it in a war with the elements, but at last, it is his only property, and he must use it, or he must abuse it, as his judgment may direct.

I do not, for these reasons, and because a first planting is generally the cleanest, and most carefully executed, commence before the first of April, or desire to close my Cotton planting before the first of May.

I make but twenty-one ridges in one hundred and five feet, because that distance is necessary to make a full, large, high ridge, which will so deeply bury vegetable roots, and grass seeds, as to permit the Cotton to be well up and growing, without being injured by the hand or the hoe, and because I think lands are best preserved when at an early period of their culture the vegetable matter upon their surface is intermingled with the argillaceous or silaceous matter, of which their substratum may be composed. Upon ridges so constructed, I would open a trench, and drill my Cotton seed, at one bushel to the acre, taking care to soak the seed from two to three days, or until the shell is burst, and the seed germinating, then covering with the foot, for the purpose of bringing the earth into close contact with the moist seed, it will rarely if ever fail, and coming up at so late a period, has little else to apprehend than a hail storm.

I do not thin my Cotton early, from the apprehension of hail, and again, because I think Cotton very soon begins to develop its characteristic qualities, as well in health of constitution, vigour of growth, as, above all, in the peculiarities of its future fruiting and fibre. Nor do I think early thinning, has much influence upon early product; every one looks for blossoms from the seventh to the tenth of June, without much regard to when he planted or when he thinned.—Your Correspondent has given useful information upon the selecting of seed, although, for myself, I should divide all the long staples into two species; the first, what is generally cultivated, resembling yet very much the Cotton we received from the Bahamas in growth; in colour of bloom, being deeply yellow; in form of pod, being full and round; in seed, being quite naked, black or brown, and blunt, with none, or a very short beak at the end. The whole seed of this species is generally covered with wool, but of very unequal length, one portion of the wool being long, and the other, at the opposite end of the seed, diminishing one half.

The other species may be divided into three varieties. In stock, in leaf, in blossom, resembling each other, and only differing in seed, without materially differing in wool. The plants of this species grow larger, the leaf is of a paler green, more glossy upon its upper surface, the leaf scolloped into more acute angles, the blossom of a paler yellow, the pods longer in their form, and often divided into four lobes, the seed either naked with a sharper beak, of considerable length, or a seed with the same pointed beak, surrounded with a tuft of green furze; or, lastly, a seed of the same form, but completely covered with a close thick furze like velvet, of a whitish colour. This species, in its varieties, is now considered and called *Silk Cotton.* The fibre in these three varieties, does not materially differ; it does not cover much more than one half of the seed, but is of one uniform length, and very fine. It will take, of this Cotton, four pounds in the seed, to make one, and it unfortunately opens so late as to throw the gathering of it into the winter months, a circumstance that contributes probably, in part, to its quality.

To produce fineness, the seed is of first importance, but this end will certainly not be obtained, by the selecting particular seed for a year or even two, picked out of a mass; for after plants of one family, by their farina, have fairly mingled themselves, they will continue to throw out their varieties for a series of years.

If it should therefore be determined upon, in after experience, that it is proper to push the production of fine Cotton to its extreme point, my course would be to select these varieties of fine Cotton, to plant them in marsh lands, near the sea, or in any rich low lands, surrounded by saline atmosphere; to allow the Cotton to stand in the trenches, until its varieties, in stock and leaf, shall develop itself.

This practice pursued for some years, would produce as fine Cotton as can be required. In this course it may be necessary sometimes to cut the plants down with a hatchet, about the 20th October, if the Cotton has grown very large, when every half grown pod will finally open with a fine, strong staple, a little tinged, but only enough to suit the taste of fine buyers.

It will be noticed, that arresting the growth before the fruit is perfected, is only imitating the analogous practice of Flanders and Italy, for the production of the finest Flax,

for lace and cambric; this is, to sow thick, and to pull the Flax as soon as it begins to bloom.* In neither instance is the fibre injured.

But with Cotton, I have sometimes, when the pods were not half grown, and the seed was white and soft, forcibly opened them, and upon cleaning and drying the wool, found it as firm as the web of the Silk Worm, yet strong beyond what could be conceived.

I think a prejudice has lately risen up against giving Cotton gathered from the field, as much sun as is necessary to expel the moisture and to harden the seed, for the future operations of ginning, without reflecting how small a portion one day's sunning upon a boarded scaffold, bears to hanging suspended from the pods for a week before it is picked. Nor can rough Cottons be made fine by steaming or sweating in a house, although they may be heated and made tender by it.

In whipping I have long made up my mind, that when we take our Cotton from the scaffold, it should be most carefully whipped, it is then adhering to its seed, and will not be separated from it by any action of the whipper; the operation should be continued until the sand, the dust, the broken leaves, and all extraneous matter, if possible, be separated from it, this too by opening and separating the lobes, disperses whatever moisture may have remained from the scaffold.

After whipping, it is put away in bulk for the gin, requiring, unless the weather is very damp, no additional exposure to the sun.

After ginning, as the fibres are separated from the seed, and are liable to be entangled and knotted by the operation, I would not apply any additional whipping whatever, but selecting the best and most careful women, on the plantation, give them thirty pounds of Cotton each, to clean from the moats, mashed seed, and short weak Cotton, that may remain.

After this, we must leave to the manufacturer, all additional separations and cleaning, remembering, that to every trade belongs its own aptitude, and that mind so irresistibly controls matter, that the humblest mind, directed to one end, will in that end go beyond minds mightier far, spread over many subjects. *(To be continued.)*

* See Mr. William's observations in this number, on this subject.

Art. III.—*On the Cultivation of the Male Cotton; by* Wm. Elliott.

"Beaufort, 1st June, 1829.

To J. D. Legare, Esq.

Dear Sir:—It was well observed in one of your late editorial speculations in the *Agriculturist*, "that the *failures* of planters, were often as instructive as their *success*."—Though the communication of this *negative* sort of instruction can yield but little distinction to the planter, yet it is attended with this advantage, that it excites no jealousy—that there are none who envy you your experience, or who will dispute *(in this school at least,)* your pretensions to instruct.

I proceed to detail to you one of my "failures," with a view to deter other planters from repeating the same experiment. Having remarked the growing inequality in price among Sea-Island Cottons, originally of the same *market* value, I turned my attention, as was very natural, to discover from what cause this difference resulted. It occurred to me among the suggestions, that other fineness of the staple grown by certain planters, might proceed from the culture of the variety of the Sea-Island, termed *Male Cotton*, and having carefully selected, in the year 1827, from the male plants scattered over the fields, a sufficiency of seed, I proceeded in 1828, to plant five acres of choice land with this seed. It was taken from plants easily distinguishable by a practiced planter, from the common Cotton plants, by their broader leaf of a pale green, their loftier growth, long pod, and *comparative unproductiveness.* While this latter property was known, it was yet a desirable point to ascertain whether the quality of the fibre produced, would not bring in its fineness, a compensation for the diminished quantity. It was accordingly planted apart from the rest of the crop, and the product from the five acres was about two hundred pounds of clean ginned Cotton, only, or forty pounds to the acre! The adjoining fields, not superior in soil, and with no better culture, yielded one hundred and sixty pounds of clean ginned Cotton to the acre. It would appear, therefore, that the planter of male Cotton must realize four times the price of the common Cotton, before it can become pro-

fitable. The present proportion between the values of these two sorts, is as two to one only. It may be proper to remark, that from the five-acre experiment field, (though the seed was most carefully selected,) the product was not homogeneous, as many stalks of the common Cotton grew up with the male stalks; whether from a natural tendency in these varieties to run into each other, or whether from some accidental mixture of seed, I am unable to determine.—Perhaps I should add, that the seed described in my letter, published in your "March number," as producing very fine Cotton, is *not* the male seed; had it been so, the opinion expressed by your co-editor, as to its unproductiveness, would have been perfectly correct, for the male Cotton, while its staple is fine, is decidedly an indifferent bearer. If I dissent from an opinion, in every way so well entitled to respect, I beg him to believe, that I do so on the authority of facts which have been satisfactorily proved to me. I cannot believe that variety of *fine*, I may say of *superfine* Cotton to be very unproductive, of which a planter has made to an extensive field, an average of one hundred and fifty weight to the acre! nor, of which another planter has produced from an area of three acres, seven hundred and forty pounds of clean Cotton! These facts seem conclusively to establish my position, "that the productiveness of these fine varieties, is not necessarily in the inverse ratio of their fineness." Were it true, as has been argued, that all these fine Cottons were unproductive, the disclosure made to you would be of little consequence. It could be a matter of no great moment to the planter, whether he made one hundred and sixty pounds to the acre, of Cotton worth twenty cents, or forty pounds, worth eighty cents. But it is not to secure the possession of a mere unprofitable secret, such as this would be, that such untiring precaution is used, and such exclusion practiced! Walls are not built in sport, nor are bars and bolts resorted to without a purpose! No, sir, if instead of producing forty weight to the acre, like the male Cotton, there is a variety of even finer quality, which has produced more than two hundred weight to the acre, you will admit, that it is a secret worth knowing, and worth keeping!

I do not mean to condemn those planters, who having discovered this secret, have kept it hitherto, for their own

advantage. They have an undoubted right to do so—a right as clear as that of the mechanic, who, in obtaining a patent for his discovery, thus secures to himself a full compensation for the benefit which he extends to the community. If, on arriving at this secret, I have chosen to pursue a different course, it is because, a Southern planter myself, I place too high a value on that *liberality of character* which has ever distinguished the class, to bring it into question, by a concealment evidently inconsistent with that character: and because, if this obligation were removed, I should feel myself bound, as a member of an Agricultural Society, to divulge every thing connected with agriculture, which, in my opinion, would promote the advantage of my associates. In all such associations, it seems to me, there is an implied contract between the members, by which each is bound, fairly and freely to contribute whatever he can, to the agricultural improvement of the whole. To meet such Societies, with a view to extract from the members all such intelligence as may promote our private interests, and to conceal from them such secrets or discoveries, as accident, or our own industry has revealed to us, would seem to me conduct the reverse of liberal, and but little short of dishonest. I say this, not in censure of others who may view this matter differently, but in explanation of the course I have myself adopted, and which is so little in keeping with the keen and calculating spirit of the day; that without such explanation, it might be condemned, perhaps, as primitive, and savouring too strongly of the rustic simplicity of a former age.

I have been asked by several intelligent planters, who had read the article published in your "March number," "Whether by planting seed, selected from its resemblance, to that described in my letter, I could be certain of obtaining Cotton of the same fine quality?"

I would reply to this inquiry, that I am by no means certain of it; but believe that I shall make an approximation to the point desired, if I do not reach it at the first effort.—If some of these seeds, though outwardly resembling the seed described, should produce ordinary Cotton, the presumption, nevertheless, is in favour of gathering more that is fine, from seed so selected, than if there had been no selection at all! The general quality of the product will be improved, and from this improved stock, a further selection would, in the course of a few years, carry your staple to the highest de-

gree of perfection. This is not mere theory, for the planter to whose success I alluded on a former occasion, improved his staple in this very way, viz: by the selection of seed by hand. There are others, I understand, who adopt another mode, requiring still more nicety; it consists of handling the Cotton before it is ginned, and determining, *by the feel*, whether it is of uncommon fineness: the seed of this Cotton is then, without reference to its external appearance, reserved for planting. Both of these methods fall short, undoubtedly, of the best, which is, to plant from seed that has already produced the high priced Cotton. But few enjoy that advantage—fewer still are anxious to extend it—and how shall a planter who does not enjoy it, hope to obtain it, unless he adopts one or other of the expedients I have named? He can, indeed, select from the growing plants, but he who *begins* by this, has already lost a year.

In conclusion, Mr. Editor, my object has been gained, if I have saved an useless waste of time and labour to the agriculturist, by directing his mind to the *true secret* of these remarkably fine Cottons. I have maintained, that it lies not alone in the local situation—nor in the quality of the manure—nor in the method of culture—nor yet in the preparation of the staple, though each of these is important—but in the *selection of seed*. I have already described that seed to the planter—his own industry and sagacity must do the rest.

With sentiments of esteem, I remain your obed't serv't,

WM. ELLIOTT.

OBSERVATIONS BY THE EDITOR.

We think that the lapse of a year or two will settle the real price which the Silk Cotton will bear *as a crop*. In that time, we believe the question of its relative productiveness will be decided also. And here we must leave the difference of opinion between Mr. Elliott and ourselves, for with what grace should we appear as the opponent of so able and so liberal a writer.

A word or two, and we are done! and we trust to our Correspondent's candour to apply to far other persons than himself, the observations we are now making.

When a few acres of any plant are cultivated under such peculiar circumstances as this Cotton has been; with prospects of getting for it ninety or a hundred cents per pound, and dreams of one hundred and twenty or one hundred and fifty cents; mayhap of even six hundred dollars per bag floating in the mind of the growers, it is not wonderful that an extraordinary product per acre should have been the result.—Even *common* experimental crops are much more productive than general crops ever can be, for reasons which all planters well know; yet to compare an experimental, to a crop raised in a general way, is too often done; hence the disappointments that planters and farmers fall into, and the calculations grounded upon such premises, which prove too often delusive.

Two objects we have in view always: to recommend caution where caution is necessary, and to rouse the negligent by every means in our power. In the present pursuit of many of our fellow citizens, we see some in the clouds, in pursuit of visions which never can be realized, and we would fain turn their attention to the *improvement* of this culture—of the merely fine Sea-Island Cotton, which we think will be a far more certain road to wealth.

The decision of the comparative productiveness of the different qualities of these Cottons, we leave to time and to Mr. Elliott himself. We beg him, if he continues to be of the same opinion, a couple of years hence, to signify it through this work. If he changes his opinion hereafter, we know he will not refuse to explain his reasons. "A Southern Planter himself," and born where he was, we know we shall find in him that liberality and candour which have ever distinguished those of Carolina, and which we still hope are fully appreciated by every reader of our work.

J. G.

ART. III.—*Remarks on the Advantages of Marsh Mud as a Manure for Cotton; by* WHITEMARSH B. SEABROOK, Esq.

"Edisto-Island, May 28th, 1829.

To the EDITOR of the "SOUTHERN AGRICULTURIST."

Dear Sir:—That the husbandry of South-Carolina has been very considerably ameliorated within a few years, ap-

pears to be generally acknowledged. To the simultaneous establishment of many Agricultural Societies, and the active zeal of our most patriotic planters, this important reformation is fairly to be ascribed. It is true, that injudicious tillage, with its necessary correlative, a scanty increase, still marks the operations of a portion of our fellow-labourers; yet, in the main, there is discernible every where, more method and order, a better directed skill, and, at length, the evidences of a disposition to heed as well the admonitions of theory as the lessons of experience. The planter no longer depends on the unassisted efforts of the soil for a plentiful harvest. He now practically subscribes to the doctrine, that the vegetable, like the animal kingdom, it is necessary to invigorate and support with appropriate food.

There is no part of our agricultural duty more worthy of our undivided attention than the most efficient and economical scheme of this fertilizing lands. Unless nature be frequently aided, we have been experimentally taught that her gifts will soon be deprived of their original value and importance. Under the influence of this truth, the prudent husbandman redoubles his exertions, and by a systematical arrangement of his work, and the abandonment of certain antiquated customs, he succeeds not only in enriching all the ground he cultivates, but in reference to time, in going beyond the demands of his growing crops. But a short period has elapsed when we found it difficult to manure but a very limited part of our Cotton fields: the provision crops were, of course, neglected, for the impolitic dogma of those days upheld the idea of drawing our supplies from the granaries of our sister States. A more auspicious era, however, has dawned upon us, and if the political evils which are prostrating the best energies of the people, were only materially mitigated, South-Carolina would soon be what her geographical situation intended her to be, a wealthy, powerful and happy State. In the prosecution of his labours, with a view to the improvement of the soil, the planter too often acts contrary to the plainest maxims of geoponical science. Reason dictates, that the true cause of the unproductivenes of land should first be ascertained, ere the application of a corrective is attempted. The practice hitherto has been to spread manure indiscriminately in any quantity, on every description of soil. From the absence of correct knowledge on this subject, serious losses have been sustain-

ed by many enterprising and industrious agriculturists. To this cause do I attribute the disuse of some manures, and the incredulity that prevails with regard to the efficacy of others. Without noticing at this time, the numerous other substances which contribute to the profitable production of the Cotton crop, allow me to invite the attention of your readers to the valuable properties of Marsh Mud. Its utility has, I understand, been doubted. On this island, I can assure you, it has effected a revolution in one branch of our system of husbandry of no ordinary character. Every other artificial aliment for sandy soils is gradually yielding to it. Lands which at one time but illy requited the labours of their proprietors, are now among the most productive, from its salutary effects; whilst others that, from the same unknown defect, were supposed incapable of any essential improvement, under the vivifying agency of this gift of nature, have been restored to a healthful and prolific state. The prominent advantages of *salt clay* mud, for it is only of this description that I would speak, when used on *sandy* soils, are:—

1. The alteration it produces in the constitution of the soil. The expedient of commixing earths has long been adopted as among the most effectual means of bettering their condition. The proper admixture of clay and sand, contains the greatest store of those principles which constitute the *pabula* of vegetation.* A soil purely argillaceous or siliceous is absolutely barren. Unite the adhesiveness of the one to the friability of the other, and you combine qualities the most agreeable to the interests of the farmer. That one of the principal benefits derived from mud as a manure, is to be traced to its mechanical operation, is plainly deducible from the established fact, that, on clayey soils, its advantages are limited entirely to the acceleration of the progress of vegetable life. From these reflections it results, that mud should be strewed over the ground in a pulverized form.—As its complete incorporation with the earth can only be accomplished when it is measurably free from moisture, it should be collected early, but not sown until it is capable

* As alumina possesses all the properties of adhesiveness, in an eminent degree, and silex those of friability, it is obvious that a mixture of these two earths, in suitable proportions, would furnish every thing wanted to form the most perfect soil.—*Grisenthwaite, "On a New Theory of Agriculture."*

of being reduced to powder.* "Sandy soils are to be distinguished," says a "Practical Agriculturist," "into *siliceous sandy*, or sandy flint, and *calcareous sandy*, or chalky sand." "The epithet sandy," he further remarks, "is not an appropriate distinction for any soil that does not contain at least seven-eight parts of sand." The quantity of mud which lands could advantageously bear, it is therefore probable, depends not only on their sandy quality, but also on their chalky or flinty properties. Whilst some soils, from their peculiar texture, would improve under the influence of eighty cart loads to the acre, others of a less siliceous character, might sustain injury from a much smaller quantity. In the absence of certain information on this subject, which chemical analysis alone could impart to him, the planter is guided rather by the product of his crops, than by any theoretical notions of the ingredients of the soil.

2. Its healthful action and strong maturative powers are the next characteristics of mud. By it a Cotton crop is seldom diseased; the pods usually are large, oval, and comparatively free from rot and stains. Mud is not a stimulant, except so far as its saline property is concerned: its beneficial agency is rather of a negative than positive character. The abundance of fruit which it is wont to mature, is referible, not to its directly fertilizing influence, but to its tendency to neutralize those earthy substances which are inimical to prolific vegetation. The part which salt acts in the production of these results, I apprehend is very considerable. In bringing the fruit rapidly to perfection, it alone is the agent. If scattered over the ground at the rate of five or six bushels to the acre, the Cotton plant, in relation to the colour of its leaves, and the ripeness of its fruit, will present many of the appearances which indicate the presence of mud. That salt is one of the most powerful substances in the composition of our marshes, and hence that the latter, by injudicious management, may peradventure inflict injury as well as confer benefits, is sustained by two other considerations, to wit, the difference between the enriching effects of salt mud and fresh mud, and the power of the former, if immoderately used, to sterilize the earth.—

* A few of my friends differ with me and others on this subject, and think that mud newly taken from its bed is as good as that in a dry state. The difference in the constitution of our soils is, perhaps, the true cause of this contrariety of opinion.

Loam or peat, from ponds and swamps, is a great auxiliary to vegetation, but that both are infinitely inferior to the turfy matter of the subject of these remarks, we have had abundant evidence. That salt might be made to render lands barren, as well forever, as for a time, we are informed not only from Holy-Writ, but by the experimental tests of the farmers of England.* "When Abimelech took the city of Shechem, he beat down the city and sowed it with salt," that the soil might be forever unfruitful." "Salt, if employed in *large* quantities, in its natural state," says Sir John Sinclair, "is hostile to vegetation, yet it operates advantageously in various ways, when judiciously applied to arable land.—In large quantities it has a tendency, like every other excessive stimulant, to disorganize and destroy the vegetable substances with which it comes in contact; but in *moderate quantities*, it promotes the growth of vegetables." "Hence the advantage of mixing it in moderate quantities with farmyard dung, and other animal and vegetable substances."—Similar statements predicated on experience, are to be found in the writings of Sir John Pringle, Macbride, and other eminent agriculturists. Virgil and Pliny reprobated the idea of strewing salt on land, and perhaps for the reason, that if incautiously used, it would resist the decomposition of animal and vegetable substances.† With regard to our experience, I have to remark, that on the places where mud is usually thrown before it is carted out, vegetation is seldom seen. The soil becomes of a whitish appearance, and its excessive saltness is not only known by the taste, but readily distinguished in dry weather by the eye. Even on spots where it is deposited, preparatory to its being spread, it is oftentimes difficult for the seed of Cotton to germinate. "When common salt acts as a manure," says Sir H. Davy, "it is probably by entering into the composition of the plant in the same manner as gypsum, phosphate of lime, and the alkalies."‡ *(To be continued.)*

* See Note at the end of the Communication.

† Salt and Alcohol owe their powers of preserving animal and vegetable substances to their attraction for water, by which they prevent its decomposing action, and likewise to their excluding air.—*Sir H. Davy.*

‡ Common Salt consists of the metal named sodium, combined with chlorine; and pure soda consists of the same metal united to oxygene. When water is present, which can afford oxygene to the sodium, soda may be obtained in several modes from salt.—*Sir H. Davy.*

OBSERVATIONS BY THE EDITOR.

It is our misfortune to differ sometimes from our most esteemed Correspondents, and in this instance we unfortunately differ from Mr. Seabrook, in a part of his communication. These things will occur in the best regulated agricultural societies, but as the illucidation of truth is the real object of all, we are confident that provided it *is* elicited, the pleasure felt will not be lessened to any one by the mere recollection, that he himself is not the immediate discoverer of it, if he is the inciter of an inquiry after truth.

Of Salt-water Mud, or Marsh Mud, as it is commonly called, as a manure for Sea-Island Cotton, such is the opinion we have had for twenty years past, that we cannot express ourselves too warmly in its favour: but against *salt* itself, and *salt water*, as manures, we enter our dissent as strongly as we can record it.

We have lived most of our life within sight of the sea, and for twenty years past within ten yards of *salt* water. Wherever we have known it flow *unaccompanied by mud*, its borders are marked by uniform barrenness, and all the fair experiments that we have met on record, where salt *by itself*, has been used in sufficient quantity to show its effects, there appears to us to have been but one uniform result, namely, *perfect sterility*. No agriculturists in the world can better settle this question than the Rice-planters of South-Carolina, *if they will but give us the result of their own experience*, and on this footing we will take up this question hereafter, while at the same time we will endeavour to show the *origin* of the many reports of salt being useful to farmers *as a manure*. Our object at present is to assist Mr. Seabrook's laudable efforts to encourage the *abundant* use of *salt mud*, in the cultivation of Cotton, and in order to forward his truly patriotic views in this, we shall concisely describe what we found to be the easiest, the most economical, and by far the most effectual way of procuring it in large quantities. *This is best done with wheel-barrows;* but if hands cannot be conveniently spared for this mode of collecting it, flats will be found to suit also; although they are not as expeditious, nor as economical as the other mode.

For the operation with wheel-barrows, then: Let two inch plank or slabs, be laid in succession, from a convenient

place on the high land, for the carts to load at, into the marsh or mud bank,* as a common gangway for the whole of those at work, to go *into* the creek or river upon. Let another gangway be laid, commencing at a short distance from the first, and communicating with it at a convenient point on the mud bank, but running still further on the mud, by one or two lengths of plank. From the last planks, beyond the junction of the pathways, lay single planks at right angles, on each side. From these last the barrows are to be filled with the broad hoe from either side, and by one or two barrows on each plank, as the case may be. The second gangway must form the most direct communication with the shore, and on it *alone* must the negroes be compelled to wheel their loaded barrows to the landing. The two gangways are to be connected together at the landing place, by plank laid conveniently from one to the other on the high land.

The hands, *be they more or less, must all fill and start together*, falling into line as they reach the common path; on this they are to proceed to the landing, when each stopping and taking out the side of his barrow, empties his load. As the cart scannot take away as fast as the mud is deposited, *extra* hands must attend to haul it out of the way, otherwise it will soon flow back upon the gang-way and stop the work.† As the hands empty their barrow loads, they keep on to fill again, proceeding along the first gang-way, and each turning off to his own stand as he gets to it.

Where the single planks, at right-angles, join on to the main path, short planks must be laid, so as to form a triangle at each turning, whose sides will be about the length of the shaft of the wheel-barrow. This enables the hands to turn the corner by running the wheel along the short plank,

* By mud-bank. we mean the flat muddy bed of the river, on which the marsh grass grows.

† It will be found most convenient to raise the part of the line which forms the junction between the two gang-ways, about two or three feet, like a bridge, laying two widths of plank at this part only If this is done, and the length of the bridge will admit of all the barrows being emptied at once over its side, no hands are required to haul away. It will soon be found, that if carts enough can be furnished to carry off the mud, the most extensive fields may be manured in a comparatively short time.

In general, women handle the wheel-barrow at brick-yards better than the men, and hence in the mud, they will be found to work to great advantage. And we would observe, that the operation, when well conducted, is done with so much comfort to the hands, that they can be employed at it in the coldest weather in winter, provided it does not rain.

while the negro himself steps round the right-angle. The same contrivance must be adopted at both ends of the plank, which join the gang-ways at the landing, observing that at the entrance of his own plank, or path, each labourer ought to stop and change his position: that is, get *in front* of the wheel-barrow, and draw it after him. In this way he is prepared to start again when filled, pushing the loaded barrow before him.

Nothing can exceed the expedition with which this operation goes on, and the quantity of mud delivered by an expert gang of hands exceeds belief. But the greatest attention must be paid to the convenience of the labourers, by having the gang-ways well laid; well cleaned and *sanded;* and all the wheel-barrows kept in good order. On clay soils, coarse sand, very suitable to sand the plank with, will be found under high banks, exposed to the washing of the tide. Chaff, or saw-dust, may be substituted, but are not as good. One or more expert women, must be put to clean off the mud as it drops on the various path-ways, and to sprinkle them with the sand. On *their* attention depends greatly the success of the work.

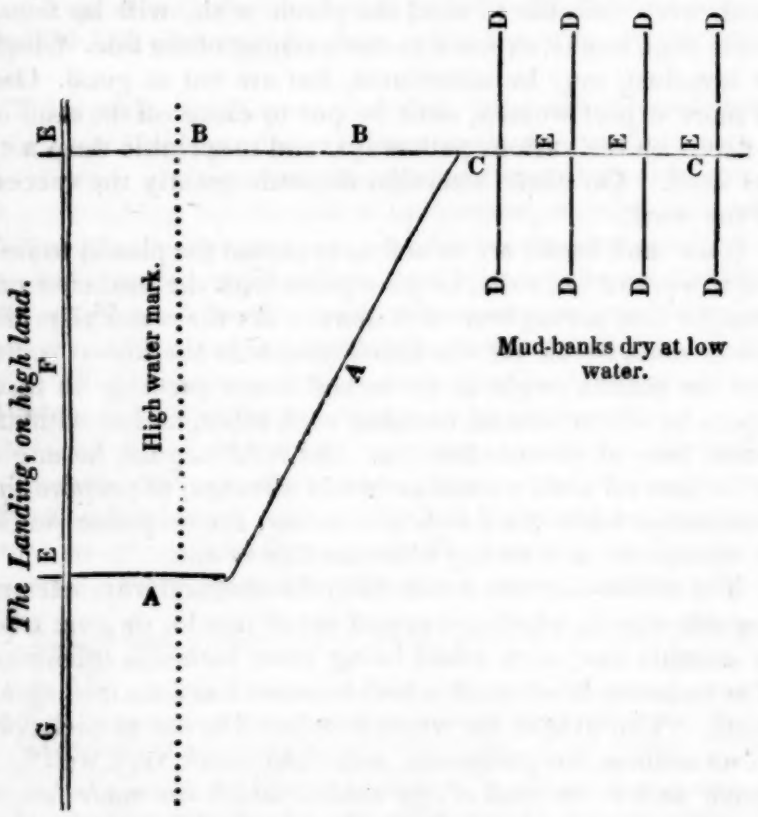
If the mud banks are so soft as to permit the planks to sink when worked on, rails, or pine poles with the branches on, must be laid across here and there. As the water rises the driver must break off the hands situate in the lowest spots, and the planks ought to be staked down securely in their places by strong stakes, crossing each other, and so with the whole line, as the tide flows in. As it falls again, he ought to be sent off with a hand or two in advance, to prepare the gang-ways *while the hands are eating*, for no pause ought to take place in working while the tide is out.

The wheel-barrows are made in the common way, excepting the wheels, which are sawed out of tupelo, or gum tree, of suitable size, each wheel being three inches in thickness. The common brick-yard wheel-barrows have no iron about them. The axle of the wheel is reduced in size at each end, so as to form the gudgeons, and these work very well in a notch under the end of the shafts, *which are made longer than usual*, to receive rather clumsy wooden cleets, which keep the ends of the axle-tree in their places. The sides of the wheel-barrows must be conveniently fitted to slip in and out. The size of the stuff for the shaft is three by two inches, and is generally got out for brick-yard work, on the

plantation, of white oak; for mud work, pine may do. The sides and bottom are best when made of Northern pine, or other light stuff. The price of wheel-barrows is so high that we strongly recommend every one to try to make them, in which the most ignorant plantation jobber will easily succeed. We would only observe, with regard to flats, that the long Santee Canal Cotton flats, are to be purchased occasionally very cheap. One of these forms, with a little management, two very convenient plantation flats, at a very trifling expense. The mode of getting out mud with these useful assistants by tide work, is known to every one.

J. G.

Plan of the mode of laying the planks.



A. A.—The first gang-way of planks.
B. B.—The second do.
C. C.—The planks beyond the junction of the gang-ways.
D. D.—The planks at right-angles, from which the mud is dug on each side.

E. E.—Corners. If any difficulty occurs with hands unaccustomed to the work, it may be necessary to have a number of short pieces, eight or ten feet long, to place to suit the negroes mode of turning the corner, which at first will be difficult.

F.—The landing platform, two planks wide, at which the mud is discharged.

G.—A slanting plank, one end resting on the ground on which the wheel-barrows are carried up or down when repaired.

ART. IV—*On Back Country Cultivation, in reply to the* EDITOR; *by* D. R. WILLIAMS, Esq.

"Factory, June 6th, 1829.

Sir:—You did me no more than justice when you acted on the presumption, that I should be happy if you could turn the Essay from the '*American Farmer*,' which I authorized you to publish as mine, to any benefit to the country, although attainable only by demonstrating my errors; for all my motives for such authority, are expressed in the first sentence of that production. To be gratified in seeing any one engaged in a practice which, I believe has been advantageous to myself, belongs too much to a social temper, to be avoided by me; while to differ from me in opinion on such subjects, causes no uneasiness whatever; for it "neither picks my pocket nor breaks my leg," nor yet can it create embarrassment of any kind, even when protested against as an "innovation in husbandry." If my practice be good, the loss is to him who avoids it; if bad, it certainly ought not to be countenanced by you. I hope this state of feeling may be considered perfectly consistent with an anxious desire to have my views fully understood. Nor am I at all surprised that you should have entirely misapprehended me, in one particular. Doubtless the fault is in me, for with affairs a little more enlarged than convenient, and much more complex, by their variety, than any one should seek for, at my period of life, I have quite too little time to *think*, and therefore ought not to write at all: but as you have induced me to do so, I presume you will cheerfully admit my explanation. Allow me then to state, that the sys-

tem I pursued up to 1825, is the same I still follow—the "enclosing system," as it is sometimes designated, and with which "farther experience has satisfied me yet more." I allow no foot to tread the fields appropriated for cultivation, that from the nature of the soil is susceptible of injury from treading, except those employed to work them; and again add, "I have derived as much benefit from keeping my cattle *out* of my fields, by his (Col. Taylor's) system of feeding them in pens, as from the large quantities of manure made in them." You have mistaken an incident of that system for the system itself: that incident is the use to which I apply "certain portions of land to be sowed either with rye or oats in the fall, and to be fed down after the grain is ripe." These portions of lands are additional to those used for the crop. I considered that I was answering your wishes by stating my practice simply, without enlarging on supposed advantages, or attempting to discuss the various opinions that had, or might arise concerning them, presuming that if any good was to result, it would be from inducing others to test them. Concerning this particular incident which I recommend for trial, by all who have open land enough for the proof, permit me too add, to every planter whose system of cultivation is compounded of plough and hoe a *pasture* of some kind or other is indispensable. How is this position to be made most advantageously? That which has proved most beneficial, as well as economical to us, is that which I have suggested; but it was recommended as a *pasture*, not a system for fertilizing old, worn-out land, and in *exclusion* of that system which I have long followed and still approve. If to have your butter of the colour of gold in winter, and enough of it too, instead of that which is always of a pale whitish hue, when the cows are fed wholly with dry food; if an abundance of milk be desirable; if fat calves are wanted, instead of the poor, lean, long-haired little creatures that have been "knocked on the head with the churn stick;" if rich grazing in the depth of winter be sought, for your colts and brood mares, you have only to sow with rye or oats a sufficient quantity of land *in the fall*, the earlier the better, to obtain all these; until the 1st of March, or even the middle, when the soil is rich, at which time, the uses here suggested, will have paid you many times told, for the expense of producing them. When the grain shall have become ripe, your work-horses and mules will fatten

by giving them access to it, without any other food than that which is always given at noon. When the grain has thus been apparently consumed, your hogs, turned in, will increase and multiply, and fatten to ten fold the value of the seed and labour you have expended; and what is not less satisfactory, these portions of land thus treated, will after three years, produce more than they could before you derived all these advantages from them.

On the subject of saving oat seed, by striping it with the hand from the stems in the field, I have but little to say. It is evident from your comment, that this is too great a novelty (I will not understand your term, innovation, in its obnoxious sense,) for your belief. Before you protested against it, however, as such, would it not have been quite as well to have tried it? I have not said it is the most expeditious mode that can be devised; but to those who may be disposed to try, I will add, that with a convenient sized basket, suspended from the shoulders, in front of the labourer, he can thus gather more oat seed, in my opinion, in the same time, than he possibly can by any of the ordinary modes now in practice.

With respect to the improvement of the staple of Cotton, by thinning, I reply that any species of small grain (I do not allude to Rice,) is accelerated to maturity by thick sowing. This law of nature embraces Cotton also.* The grain of the first is small and diminutive; so also is the pod and wool of the last. Upland Cotton being used by the manufacturer, exclusively for the coarser fabrics, I am not aware that any attention is paid by the purchaser to its fineness — Colour, strength and length of staple, are the chief circumstances that constitute its value. These are induced in the greatest degree, by giving free access to sun and air, while the plant is growing. That which is not thinned at all, on rich soil, sowed as thick in the drill as oats or wheat, will mature first, and has produced, as often as I have made trials by weighing, as much as that which was thinned in the ordinary mode; but the size of the pods, and length of staple, are so obviously smaller and shorter, as not to be doubted by the most superficial observer.

I wish you every possible success in the arduous labour you are engaged—the improvement of agriculture. It is

* See Mr. Spalding's letter, page 349.

indeed arduous, and must continue so while we have neither teachers to instruct, nor axioms to govern. It is the peculiar misfortune of our profession, that we will consider nothing as *settled.* The experience of no man is admitted as authority—every one will try for himself—and hence we begin and almost die tyros, without advancing beyond our noviciate.

D. R. WILLIAMS.

Note, by the EDITOR.

It has been suggested by some of Mr. D. R. Williams' friends, that the note (page 286,) of our June Number, might be construed into a doubt on our part, of the correctness of his statement, of the produce of an acre of Cotton. We should regret much that any thing we say in our observations on agricultural affairs, should be considered as personally reflecting on any Correspondent, or in fact on any person whatever. In the present instance, we assure Mr. Williams, and all our readers, that we did not intend to express the slightest doubt of his veracity, for we had none, but as observed in another note, (page 287,) that our rule is, "to calculate profits, as far as we can, always below the mark, and expenses above the reality," for that reason we made the observation, to prevent too sanguine calculations on the part of some of our readers. J. G.

ART. V.—*On the Cultivation of Beets; by the* EDITOR.

We promised in a preceding Number,* to give directions for the cultivation of the Beet, so that they might be had during the winter and early spring months—we now proceed to fulfil the promise, and as we have already given directions for their culture, it only remains for us to state the proper time for sowing them, accompanied with a few remarks.

* No. 1. of this volume.

The earliest sowing should not take place before the last of July, or commencement of August, but even this is very uncertain, as they are liable to the attacks, and will all be destroyed by the grub-worm, unless precautions are taken to prevent their depredations. Watering them with decoctions of Tobacco, or Pride of India, will, in all probability, have this effect. If they succeed, they will be fit for use early in October, and will continue very fine during the whole winter. September is, we think, the best month for planting a general crop, for if sown later they will not have attained a sufficient size, and not be vigorous enough to withstand the cold of winter, unless the season be very favourable. We have succeeded as late as the middle of October, but those sown in September have always been the finest. If sown then, they will be large enough for the table during the month of December. We have had them of the size of three inches *diameter*, on the 14th of December, from some planted on the 7th September. Some of this crop were from five to six inches *diameter*, about the middle of February, the season was very favourable; but we have often had them of that size in March, for they continue to grow, though slowly, during the whole winter, and with the first approach of spring, start forward and grow with great rapidity. During very severe weather (such as we had in 1826–7, and the last winter,) the young Beets will require a little protection, should the sowing have been made late, or they will be seriously injured, if not destroyed—those which have grown to some size, need only to have the earth drawn up to them, covering their crowns entirely. Should this precaution not be taken, and the weather be very severe, the whole may be lost.

In conclusion, we will observe, that it is from this crop alone that seed can be obtained. They will shoot up their seed stalks in April, at which time they become unfit for the table. As they yield an abundance of seed, only a few need be left for that purpose—these should have their stalks supported by stakes driven alongside, to which they should be tied. Should Beets be required in the month of April and early in May, they should be sown in December; but they will require protection during severe weather. About the middle of May, those sown in January, will be fit for use—for the management of this crop, we refer our readers to the first number of this volume.—J. D. L. *Ed. of So. Ag.*

ART. VI.—*On Open Rice Planting; by* HUGH ROSE, Esq.

To the EDITOR of the "SOUTHERN AGRICULTURALIST."

Dear Sir:—For the information of those who are unacquainted with the new system of planting a Rice-crop, I, with pleasure, submit the result of my experience and attentive observation for three successive years. The last very cold and backward spring, has confirmed my opinion, that open, or uncovered planting, is very precarious, until about the 10th of April, when the absence of ducks and black-birds lessen the risk of an irregular crop from the necessary exposure of the grain. If I commenced my planting as early as the 20th or 25th of March, I would invariably cover the grain until the 10th of April, not only to shield it from those diurnal and nocturnal depredators, the ducks, but also to obviate the necessity of keeping the water on an injurious length of time. To those who are disposed to practice the open planting, I would urge the necessity of the land being highly prepared for the reception of the seed, as it succeeds best when the soil is brought to a good tilth. In open planting, the square should be sown in a day, and flowed in the course of a night. The seed necessary for the day's sowing, should be soaked in a flat, or other vessel, twelve, or even twenty-four hours, and spread on the barn-floor the night preceding the sowing. The water should be kept on according to the state of the weather, from five to eight days, or at all events, until the green sprout is about half an inch long, and the *root sprout* a quarter of an inch long; if the water is kept on three or four days too long, the root sprout becomes so much elongated and weakened, that its energies are nearly destroyed, and does not penetrate the earth, if it is a clay soil. My trenches are equi-distant, at fourteen inches from centre to centre, and I sow two struck bushels to an acre. The advantages of open planting are, that the labour and inequality of covering is saved, and that consequently, your Rice comes up with more regularity, and ripens more uniformly. It is said that it branches more than the covered Rice, but this fact I have not ascertained. It is certainly much less subject to grass in the trench, and volunteer Rice, which are deductions to successful planting.

I have been much devoted to agricultural pursuits for many years, and with some practical experience, and I have in a great degree forsaken the beaten path of covering, as soon as the season is sufficiently advanced for open planting, which requires vigilance and daily inspection to insure a well set crop. Having experienced some losses this year, from too early open planting, I am induced to make this communication, to prevent a similar result to the inexperienced planter, who may be disposed to adopt the new labour-saving system.

I am, very respectfully, dear Sir, your most obed't serv't,

HUGH ROSE.

Charleston, June 12, 1829.

ART. VII.—*On Sowing Rice broad-cast, and on Grinding and Cooking for the field Negroes; by* ALEXANDER WATSON, *in a Letter to* W. WASHINGTON.

"St. James, Santee, January 8th, 1829.

Dear Sir:—The great difficulty in sowing Rice broad-cast, is, that it is impossible for our Negroes to do it properly—it is even a difficult task in the old countries where they have none but white labourers. Another objection to broad-casting on an extensive scale, is, that you must put all your land in a high state of cultivation, and you cannot plant to advantage before the first of May, for the land at that time having become warm, the Rice rapidly vegetates, and gets above the grass. Whereas, were you to plant early as common, the Rice not attended, of course the grass would outgrow the Rice, and consequently you cannot expect a fair crop. I conceive a better plan, and also more to be made when you do not apply manual labour, is to plant six inches apart, in rows, and where the Negroes can sow it properly.

In ditching, the width depends on the quantum of water to be vented; the depth invariably is between five and six feet. The quarter drains, eighteen inches in width, and between three and four feet deep. Covered drains will not

answer, where you attend the land by flowing, as it will take at least five or six days to dry your land; *i. e.* take the water from the surface; it may answer very well where the dry culture is attended to, as it will save the labour of cleaning the drains.

I make my provisions in abundance—I have sold Corn for the last two years—I never stint—I do not allowance, but give my people as much as they can possibly eat. I cook for them.

I am compelled to plant the greater part of my Corn on high beds, in consequence of my Rice lands laying on both sides of my Corn, and as in flowing seasons a great deal of water is absorbed, were it not for the high beds the Corn could not thrive from the increased moisture. On some of my high sand ridges, I always plant flush; on my poorest land, I have pens where I put my cattle in every night during the winter, and repeatedly change them; the straw that is trampled, with my tailings, and the Rice straw in its natural state, is all wagoned out, and with these I fill up the alleys; make my old Negroes list lightly on it, merely to give it a covering, with a view of rotting it, and just before planting I put my plough in and split the old bed, which being thrown on the straw and list, gives me a bed quite large enough. My beds are five feet, from centre to centre; I plant from two to two feet and a half on the bed; I leave but one stock, and the large cow-pea is planted in between each stock of Corn. Pumpkins I have planted, but do not succeed well, for after laying my Corn bed, the grass soon chokes the vines, from the great quantity of manure.

I remain, respectfully, your most obed't serv't.

ALEXANDER WATSON.

PART II.

SELECTIONS.

ART. I.—1. *On the Science of Agriculture; by* JOSEPH HAYWARD. 2. *On the Science of Horticulture, comprising a Practical System for the Management and Training of Fruit Trees; by the same.* London, 2d edition. 8vo. 1824.

OBSERVATIONS BY THE EDITOR.

We are only able to give a short extract from Mr. Hayward's valuable work on agriculture, in this number, but we hope it will be a useful one, more particularly as we have been informed that many cattle have perished of late, from the use of *permanent cow-pens, when filled with vegetable matter during hot weather.*

We think the following fact will suggest to such of our readers as pen their cattle in pens well filled and littered in the usual way, the necessity of frequent removals, at this season of the year. There is no doubt that putrid exhalations are hurtful to animals as well as to man, although perhaps, not in as great a degree.

We should be glad of information on the subject of these losses.

"Whilst recommending the careful and effectual draining of stables, for the preservation of the urine, as the most valuable part of animal manure, I also state a circumstance, which cannot be thought unworthy of notice to agriculturists, which occurred to me, to show how necessary this is also to the health of animals.

I took possession of some stables, with the horses that had been sometime kept in them, and, to my misfortune, in a very short time I found that the horses kept in those stables had

been subject to that dreadful disease, called the mad staggers, for several years. Some horses had died, and the horses then there, and which had been for some time kept in the stables, were in a wretched condition. Two fine fresh horses which were put into them, were within a few months seized with the mad staggers, and one of them literally killed himself by knocking his head about against the manger and stall; the other was saved by copious bleeding, and removed into a fresh stable, but was so reduced as to be lessened in value one half. My neighbours advised the pulling down the stables, considering the disease infectious; but having, on going into the stables early in the morning, been almost suffocated and blinded by obnoxious gas, I examined the floor and drains, when I found the former to consist of large burr stones, laid on a stiff clay; and the floor sunk so low below the drain, as not to admit of the draining away of the urine. This struck me to be a sufficient cause to affect the brain of any animal confined in it, the same as it had the horses. I therefore had the floor taken up, relaid, and properly drained; and the walls and ceiling, manger, cribs, &c. washed with quick lime; and from that time for ten years, I have never had a diseased horse."

Mr. Hayward, from whose work on *Agriculture* we make the above extract, has also published an excellent treatise on the science of *Horticulture*, and particularly on the management and training of fruit trees.

This is by far the most rational book on the subject we have ever seen, and we strongly recommend it to our readers. We are confident, if his instructions were followed, and his mode of managing the *Peach tree* were adopted in Charleston and its neighbourhood, that we should have as fine fruit as is found any where else.

The principles which Mr. Hayward wishes to establish, are, it is true, very much at variance with the old way of pruning annually. He prunes but little, and asserts that the tree ought to be left to take its natural growth, which will insure under the gardener's care, fruit of the first quality, and in the greatest quantity. The following extracts will give an idea of the opinions of the author.

"For whatever purposes, [says Mr. Hayward,] we suppose vegetables to be created, it is clearly the order of nature that all kinds advance by progressive degrees in their growth to attain their fructiferous state; and it is in the perfect accomplishment of this state that fruit trees become valuable to

mankind, and the seed or fruit being the chief object for which they are cultivated, the attention of an artist in training and pruning must be principally directed to the means required to *assist nature* in the attainment of this her purpose." p. 105.

"For different purposes it has been found desirable to suppress the luxuriant growth of trees, or to confine them within a limited space; and to effect this, the practice of all is to curtail and cut back, or prune the head or surface of branches.

"Although by these means, branches may be made to grow where wanted, and by cutting out what are called superfluous, or those which are produced beyond what can be disposed of at proper distances, an appearance of due proportion may be exhibited during the winter; the increased quantity of sap furnished by the roots, the following summer, will again obtrude itself in branches still more luxuriant and numerous, and although a due distribution of light and exposure to the sun and air, may be made by again cutting these out, this is evidently a robbery or a waste of food and sap, instead of an equal distribution of the circulating fluids, by which alone, as Mr. Knight justly observes, permanent health and vigour, and power to afford a succession of abundant crops can be given.

"*This general practice of cutting and curtailing, exhibits the singular circumstance of an artist attempting to prevent an effect by means which directly establish the cause.*" p. 188.

"It appears as if rich beds were formed and poor ones manured to facilitate the increase and growth of branches in the summer, for the cutting off and wasting them in the winter."—p. 114.

"An equal distribution of the circulating fluids can be promoted only by properly proportioning the soil a tree is planted in, or its supply of food, to the space allowed for the trunk, and head or branches to occupy; and so to direct the branches that they may be permitted to extend their full length. An exact adjustment of them may be difficult: but where a plant is found to be too weak, or deficient in its growth, its strength and increase may be promoted by the addition of food or manure, and when it is found to exceed its bounds, its exuberance is readily checked and prevented by cutting off some of its large and deep-growing roots." p. 189.

"Branches cannot well be too luxuriant, if growing in a proper place and position; for although these may not bear fruit, they will produce the branches that bear the finest fruit, and by furnishing a larger surface in less time, will produce fruits in less time than weak ones.

"The general instructions of the different authors are, to cut out all luxuriant and superfluous branches, but those terms are either very much misunderstood or misapplied.

"When the first branches of a young tree, or an old one cut back, are placed in a proper position, and those wood-buds removed that are disposed to form branches where they are not wanted, all other branches may be suffered to grow and remain their full length, and the whole of the sap furnished by the roots will be thus appropriated to an increase of the surface of the tree, which being in due conformity to the laws of nature, will bring it to a fructiferous state at a much earlier period, than when cut back and shortened." p. 114.

"Fermentation is detrimental to plants where it is produced by substances in contact with the roots, stems or branches, and often either by the heat occasioned, or effluvia emitted, causes disease and death.

"Dung when placed in contact with the roots, either fresh or in large proportion, sometimes produces a great increase of wood and foliage, but it generally *retards fructification*, or disinclines a plant to mature its fruit or seed.

"When in a state of nature, dung or manure seldom comes in contact with the roots: but being exposed on the surface of the earth, it there undergoes the needful process and change, and as it becomes soluble in water, and fit for food, it is conveyed between the particles composing the soil, or through the cavities occasioned by worms," &c. p. 110.

"When the soil of a garden wherein fruit trees are to be planted, is not naturally comformable or congenial it must be made so.

"The forming of new beds will perhaps be thought too troublesome and expensive, but it is of the utmost importance in determining the future produce of the trees; and it should be considered that the first expense is not like common manuring—it will never require to be repeated; and although at first it may appear great, yet if it be divided and placed to the account of so many years as its profitable effects will be experienced, it will bear no comparison with every other expense attending the planting and training trees." p. 136.

"It has been remarked by the most experienced gardeners, that the most healthy trees, and those producing the greatest quantity and finest quality of fruit, are found growing in a shallow light soil, on a lime stone rock.

"Whether this is occasioned by the influence of the sun and air on the roots, or whether the food collected in this situation possesses the peculiar quality of producing this effect, is not easily demonstrable; but as in either case it must depend upon the same state of things, this is of little importance.

"When the soil is open, and the food near the surface, it is readily brought in contact with water and equally distributed among the roots, which then naturally divide, become fibrous,

and run parallel with the surface, so that both the roots and the food are alike within the influence of the sun and air." p. 109.

"In preparing beds, due attention must be paid to the soil and subsoil, as each equally affects the health and fruitfulness of trees, and principally as it retains or discharges water: stagnant water being at all times particularly detrimental to the fructification of trees.

"If the elevation and composition of the *substratum* be such as to prevent a lodgment of water, and the soil on the surface be a good working loam, it will require little or no alteration, and the trees may be planted in it from nine to twelve inches deep; but if the situation be low and wet, or the *substratum* of a nature to retain water, means must be taken to prevent the roots from running into it.

"In the first place, therefore, where the situation will admit of it, drains must be made to take off and prevent stagnant water; but if this cannot be done, the beds may be raised above it, and in either case, a sound bottom or *substratum* must be formed at the depth of eighteen inches or two feet, of such materials as will prevent the roots from penetrating, or water from rising through it, and this must be laid sufficiently shelving to admit water to drain off; and along the edge of the bed a drain should be made to carry away the superfluous water: and this may be done by removing the upper soil to the proper depth, and making a *stratum* of chalk, limestone, or lime rubbish, or either mixed with ashes,* well forced together; or a more effectual method will be to form a kind of floor with stone or bricks; but in this case the joints must be well closed with hard binding mortar or cement, as otherwise the roots will penetrate and render the defence ineffectual.

"In cases where the soil has been too close and retentive and the roots are apt to grow deep, I have found the following composition and formation of beds most effectually to answer the desired purpose:—

"On the *substratum* lay a stratum of six inches of the common soil of the garden, and then form a stratum of about six inches for the roots to run and repose in, composed of two-third parts of fine drift sand, and one-third part of rich vegetable mould, well mixed together; and the better way to perform this, is first to lay on about three inches of the composition, and on this place the roots of the plant, and over them spread the other three inches, and cover the whole down with from nine to twelve inches of the common soil of the place.

"Where it is not found necessary to form an artificial *substratum*, it will be sufficient to remove the soil to the depth of fifteen

* Pit-coal ashes are here meant, not wood ashes!—*Ed. of So. Ag.*

or eighteen inches, and there form the stratum for the roots, covering it down with a foot or nine inches of the common soil.

"This composition, or principle of forming beds, will prove in every respect conformable to the nature and supply of the food of plants, and their consequent growth; and if it be desirable to force the trees to a luxurious growth, they may be supplied with manure in any quantity, by placing it *on the surface of the beds*, whence it will be carried within reach of the roots, in its proper state by water, and the injurious effect of a too great detention of moisture consequent on placing dung in contact with the roots, be avoided; and by forming beds shallow, and placing the roots at a short distance from the surface, trees may be kept fruitful, and within a very narrow space." pp. 137–139.

"In planting trees, the root or stem should be pressed close down on the soil, so as to place the roots in a horizontal direction; and all the roots, large and small should be carefully drawn out straight like a fan, and the remainder of the soil be thrown actually over. The tree should not be shaken up and down after the earth is thrown on the roots; for when a tree is thus raised up, the small roots or fibres will be drawn out; and when the stem is thrust down again, the roots being too weak to force their way back into the soil, will be doubled up, which occasions them *to knot* and *throw out suckers.* Neither will the earth require to be trodden down hard: if it be dry, it may be watered with a pot from a rose; this will force it close enough together." p. 140.

"In planting we must either adapt the soil to the space allotted to each tree, or allow each tree a space proportionate to the soil.

"A tree should not be cut back but from its beginning; if, therefore, a small space only can be allowed for the trunk or stem, and branches, the soil must be reduced accordingly; and when the soil is rich and the space ample, a tree should be allowed a space equal to its utmost growth.

"It is well known that the roots of a tree extend and increase annually, and in proportion, the branches are also extended; if, therefore, the branches are found to exceed the space allotted, and to be too luxuriant to bear fruit, it must not be expected that the cutting those off will prevent the same excess the following season, and when the means of such produce are increased."—p. 142.

"If trees are found to grow too luxuriantly for the space allowed them, it will be to little purpose we attempt keeping them within compass, by cutting back and shortening the branches, as this in most cases will increase the evil; but if in the month of November, the earth be removed, and a proper proportion of the deepest growing roots cut off, the luxuriance of a tree may be checked in any degree and rendered more fruitful; this opera-

tion may be repeated as often as required, without the least danger of disease or injury." p. 179.

"When stocks or seedlings are planted with a view to transplantation, great care should be taken that the roots be drawn out even and not crossed or bended; for if the roots are not first placed in a right posture, they seldom grow straight, or can be taken up perfect." p. 130.

ART. II.—*Chimie appliquée à l'Agriculture; par* M. LE COMTE CHAPTAL. 2 tomes; a Paris, 1823.

OBSERVATIONS BY THE EDITOR.

From this invaluable work, written by the first Chymist of France, himself "*a proprietor of extensive domains, of which he has a long time directed the operations,*" we extract the following principles of agriculture which cannot be too closely studied.

The planters of these Southern States may be assured that the sooner they adopt the system of *rotation of crops*, the sooner they will become independent and rich, and the more certain and abundant will the incomes continue to be.

In no work that we have met with, have we seen the correct principles of Husbandry more judiciously recommended or better explained; we have therefore seized the first corner of our work to transfer from the original, all that we could find room for in this number; but we shall freely draw from this source an abundant supply of information.

J. G.

On Rotation of Crops.

"With extreme care, enormous expense and manure without measure, a soil can be forced to produce every kind of crop; but it is not in *that* that the science of agriculture ought to consist.

"Agriculture ought not to be treated as an object of luxury, and therefore whenever the produce does not *largely* pay for the care and expense, the system which is followed, is a bad one.

"A good agriculturist first studies the nature of his soil, in order to know the plants which best suit it; and he easily acquires this knowledge by the nature of those which grow sponta-

neously on it, or by the result of experience gained on the ground itself, or similar land in the neighbourhood.

"But he does not limit himself to cultivate at hazard, appropriate plants merely suitable to the soil and climate; a soil would soon cease to produce, if there was committed to it *every year* the same plants, or plants of a similar kind To have constant success the crops must be changed, and varieties of the vegetable kind made to succeed each other with judgment, without ever introducing those which are improper for the soil in question.

"It is this art of varying the crops on the same ground, of making different vegetables succeed one another, and of knowing the effect which each has upon the soil, that can alone establish that good order of succession which constitutes a rotation of crops.

"A good rotation of crops is, in my eyes, the best guarantee of success which the agriculturist can give himself; without that, every thing is vague, wondrous and uncertain.

"To establish a good system of rotation, knowledge must be acquired, which unfortunately is wanting to the greatest part of our country people.

"I shall state some facts, and establish some principles, which may serve as guides in this important operation of agriculture.

"First Principle.—*Every plant exhausts the soil.*

"The earth serves as a support for plants; the juices with which it is impregnated form the principle aliments. Water serves as the vehicle for these juices; it carries them into the organs of vegetation, or presents them to the mouth of the roots which absorbs them. The progress of vegetation then impoverishes the soil constantly, and if these nourishing juices are not renewed, it ends by becoming sterile.

"Thus, an earth well provided with manure, can nourish successively several crops; but it will be found to degenerate progressively, until the ground is completely exhausted.

"Second Principle.—*All plants do not equally exhaust the soil.*

"Plants are nourished by air, water, and the juices contained in the soil: but the different kinds of plants do not draw from them an equal quantity of nourishment.

"There are plants which require their roots to be constantly in water; others delight in arid ground; many only thrive in the best soil enriched with manure.

"The farinaceous and the greatest part of the gramineous, or grassy tribes, push out long stalks, in which the fibrous principle prevails: they are furnished at the base with some leaves, whose close texture and small surface do not permit them to absorb

much either in air or in water. The roots draw from the soil the principal nourishment of the plant; the body of the plant furnishes litter or food for animals; so that these plants exhaust the soil without sensibly restoring it either by the stalks, which are cut for particular purposes, or by the roots, which alone are left in the ground, but which are dried up and exhausted by fructification.

"The plants, on the contrary, which are provided with a combination of leaves—thick, large and spongy—always green, draw from the atmosphere carbonic acid and oxygen, with which they are nourished. If they are cut when green, the loss of nourishment contained in the soil is less observable, because it is returned to it in some measure by the roots. Almost all the plants which are cultivated for forage are of this kind.

"There are plants, which although destined to produce grain, exhaust the soil less than the farinaceous, these are the leguminous. These hold a middle grade between the two classes of which I have just spoken. Their tap-roots loosen the ground; their large leaves, their thick stems, soft and spongy, absorb easily air and water. These parts preserve for a long time the juices with which they are impregnated, and return them all to the soil whenever they are buried before their maturity. In this last case the field is still disposed to receive and to nourish a good farinaceous crop. Beans are eminently productive of this effect.—Vetches, and particularly peas, possess this virtue in a less degree.

"In general, plants which are cut green at the time of flowering, of whatever kind they may be, exhaust the soil but little; they have drawn up to that moment, almost exclusively from the earth, from water and the atmosphere, the principles of their nourishment. These plants and their roots, are filled with juices, and the parts which are left in the ground after mowing, return to the soil all that they have extracted from it for their nourishment.

"From the moment the grain begins to form, the system of nutrition changes; the plant continues to draw not only from the earth and atmosphere, in order to develope its fruit, but it extracts the juices which were deposited in its stem and roots, to promote their formation; it is at this period that the body and roots are exhausted and dried up. When the fruit is arrived at maturity, the skeleton of the plant abandoned to the earth, restores but a feeble portion of the juices which it had drawn from it.

"Oily seeds exhaust the soil more than the farinaceous. The agriculturist cannot take too much pains to purge his fields of plants of this kind, which take possession of them with too much case, above all, wild mustard, *(sinapis arvensis,)* which the cultivated fields *(in France)* are too often covered." Vol. 1. pp. 270—276.

(To be continued.)

PART III.

MISCELLANEOUS AGRICULTURAL ITEMS.

Disease among Silk-Worms.

[We publish from that excellent and useful work, "*The American Farmer,*" the following interesting letter. Our readers, will, we are confident, take as sincere an interest in its details as we do ourselves, and join in the hope that an undertaking entered into with so much spirit will be attended ultimately with perfect success. If energy of character and the spirit of enterprize are not as frequently shown in Carolina, as formerly, they have not, it appears, entirely left the country! J. G.]

"Statesburg, (S. C.) June 16, 1829.

Sir:—When I had the pleasure of seeing you in Baltimore in March last, you were kind enough to proffer, through me, to the Misses Waties of this county, all the aid in your power, (by advice or otherwise,) to their new establishment for rearing the silk-worm; an enterprize highly creditable to them and deeply interesting to *this* State, if not to the country at large, from the circumstance of their having engaged in it, on a scale more extended than has yet been known in the United States. I promised you at the same time, to give some account of their progress and probable success, and now proceed to do so, more with the hope that your experience may furnish a remedy or account more satisfactorily for a partial failure, than that what I offer will be interesting to you. They have erected a house, intended for the accommodation of one million of worms. It is eighty feet in length by thirty in width, has four doors and fourteen windows, plastered both inside and outside, containing three rows, the whole length for the hurdles, and each row having three double tiers. The eggs were hatched at the usual time, to about the number of one million, (as like over as under.) They commenced feeding on the white mulberry, and continued until the worms began to *eat* so *large* a quantity, that it was inconvenient to procure them, being obliged to send the distance of from three to seven miles for the leaves. I will here remark, they have planted five hundred trees, now prospering, besides a quantity of the seed for a nursery and hedge. The red and black mulberry is abundant, but the received opinion is, that the silk is not so

fine, being fed on them; from necessity, however, they were compelled to commence after the third molting, to feed one half upon the red—*all* continued to prosper, fed well, were large, healthy looking, and indeed was a sight worthy and did attract considerable attention.

During the fifth stage, in a corner of the house of those fed on the red mulberry, a disease appeared: early in the morning several hundred were discovered *dead; these* were cautiously removed, as well as those appearing sick and burnt. The contagion, however, spread, and by the succeeding night but few remained on that side the house; *they* in like manner had been removed with expedition, and buried. We now entertained the hope, that all further ravages had ceased; but two days after, the disease again appeared, and in one week from the time of its *first* appearance, all was desolation, but a few thousand being saved from the whole. However, previous to the appearance of the disease (which Dandolo describes as the tripes,) the espaliers or bowers had been formed, and many thousands were spinning their cocoons: so near were these ladies to the consumation of their enterprise, and the reward of their intelligence and industry. They calculate now from having counted a portion of their cocoons, that they have at least fifty thousand saved, to prepare for market. You have a sample, which they made last year, there is no reason to doubt the quality of this will be equal.

A week previous, and during the time of the contagion, the weather had been *rainy*, and it was impossible to procure dry leaves, or dry them in sufficient quantities to feed such an immense number of worms—*this*, no doubt, was one cause of the disease, but the following queries present themselves: Is a change of food at any time injurious; that is, having began to feed on the white, is it improper to feed on the red mulberry? Is damp weather, provided the leaves are dried, injurious? If so, should the windows be closed or stoves heated? Is it proper at any, or at all times, to keep the windows opened? Is not heat beyond 81° injurious? An answer to *these*, or any other suggestions, which you or your correspondent may make, will aid in facilitating a design which may eventually benefit the public, as well as the individuals interested. These ladies (much to their praise) are not deterred from persevering, and indeed entertain hopes from a second *crop*, now making their appearance, several hundred having hatched already. On this subject, permit me to inquire, whether the natural heat of the weather will reproduce them, or whether they require artificial heat? Whether there are not certain kinds of eggs which do not hatch a second time the same season—and cannot be made to do so? And whether keeping the eggs, during the summer and succeeding spring, in an ice-house to prevent hatching, may not injure the eggs, or have a pernicious effect upon the worms hatched from such eggs?

I have thus, sir, *hastily* performed my promise to you; in doing so, I must beg to be pardoned for troubling you with interrogatories—it is but fair to impart information for information requested, but not being able at *this time* to afford any such to you, I rely on your kindness, already mentioned, your long *experience* in rearing the silk-worm, so much better than any thing we can read, to give such advice (if in your power,) as may prevent the repetition of a failure of hopes so well founded, and so nearly realized, as was the case with the Misses Waties in their laudable exertions.

I am, sir, with respect, yours, &c.

ORLANDO S. REES.

GIDEON B. SMITH, Esq.

The "*Agricultural Society of St. John's, Colleton,*" held its anniversary meeting at the Club House, on Edisto Island, on Wednesday the 8th ult. at which time the following gentlemen were elected Officers for the ensuing year:

JOSEPH EDINGS, Sen'r. Esq. President.
EDWARD WHALEY, Vice-President.
JOHN TOWNSEND, Jun. Esq. Cor'g. Sec'y.
JOSEPH E. JENKINS, Esq. Rec'g. Sec'y.
WM. SEABROOK, Jun. Treasurer.

Committee on Premiums.—Wm. Seabrook, Sen'r. Esq., Hon. W. B. Seabrook, J. C. Mikell, Wm. M. Murray, and John Hannahan.

Committee of Inspection—For the Northern Section—The Hon. W. B. Seabrook, Joseph E. Jenkins, Esq. J. C. Mikell, J. Hannahan, E. Mikell.

For the Southern Section—Capt. Wm. M. Murray, John Townsend, Jun'r. Esq. Cato A. Beckett, John Jenkins, E. M. Seabrook, Jun'r.

☞ We beg our readers to correct another error we have discovered in page 293, of last number, line 9th from the top: for "*sand hills always excepted,*" read, sand hills *no ways excepted.*

Mr. Herbemont's principal object, and the views he has long endeavoured to exhibit of the many advantages to be derived from settlements formed in our sand hills, would be misunderstood without this alteration.